

TSMC-99-431/909

January 22, 2004

To: Commissioner for Patents
P.O.Box 1450
Alexandria, VA 22313-1450

Fr: George O. Saile, Reg. No. 19,572
28 Davis Avenue
Poughkeepsie, N.Y. 12603

Subject: | Serial No. 10/706,382 11/12/03 |

Wen-Jui Fu et al.

A NOVEL METHOD TO REDUCE THE
FLUORINE CONTAMINATION ON THE
AL/AL-CU PAD BY A POST HIGH CATHODE
TEMPERATURE PLASMA TREATMENT

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation
In An Application.

The following Patents and/or Publications are submitted to
comply with the duty of disclosure under CFR 1.97-1.99 and
37 CFR 1.56.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being
deposited with the United States Postal Service as first class
mail in an envelope addressed to: Commissioner for Patents,
P.O. Box 1450, Alexandria, VA 22313-1450, on January 27, 2004.

Stephen B. Ackerman, Reg.# 37761

Signature/Date SB Ackerman 1/27/04

U.S. Patent 6,162,733 to Obeng, "Method for Removing Contaminants from Integrated Circuits," teaches a method to remove alkali metal and halogen-based contaminants from an integrated circuit device.

U.S. Patent 6,063,207 to Yu et al., "Surface Treatment for Bonding Pad," discloses etching a bonding pad opening using a fluorine based plasma.

U.S. Patent 5,824,234 to Jou et al., "Method for Forming Low Contact Resistance Bonding Pad," describes a bonding pad method.

U.S. Patent 5,380,401 to Jones et al., "Method to Remove Fluorine Residues from Bond Pads," teaches a method to remove fluorine contamination from bonding pads.

U.S. Patent 5,970,376 to Chen, "Post Via Etch Plasma Treatment Method for Forming with Attenuated Lateral Etching a Residue Free Via Through a Silsequioxane Spin-On-Glass (SOG) Dielectric Layer," discloses a method to remove a fluorocarbon polymer from a wafer surface using an inert gas plasma.

U.S. Patent 5,755,891 to Lo et al., "Method for Post-etching of Metal Patterns," discloses a method to treat after metal etch.

U.S. Patent 5,770,098 to Araki et al., "Etching Process," describes a plasma etching process.

U.S. Patent 5,942,446 to Chen et al., "Fluorocarbon Polymer Layer Deposition Predominant Pre-Etch Plasma Etch Method for Forming Patterned Silicon Containing Dielectric Layer," discloses a method of patterning a silicon-containing layer using plasma etching.

U.S. Patent 5,776,832 to Hsieh et al., "Anti-corrosion Etch Process for Etching Metal Interconnections Extending Over and Within Contact Openings," teaches a method to prevent corrosion of metal lines by performing an O₂ ashing step after etching metal lines with BCl₃ or with Cl₂.

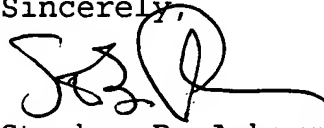
U.S. Patent 6,136,680 to Lai et al., "Methods to Improve Copper-fluorinated Silica Glass Interconnects," describes methods to process fluorinated silicate glass (FSG) film by performing plasma treatments using N₂, NH₃, O₂, or N₂O or by performing Ar sputtering.

U.S. Patent 5,854,134 to Lan et al., "Passivation Layer for a Metal Film to Prevent Metal Corrosion," teaches performing a plasma treatment on a metal layer using a fluorine containing plasma to thereby form a thin polymeric passivation layer on the metal.

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U.S. Patent 5,731,243 to Peng et al., "Method of Cleaning Residue on a Semiconductor Wafer Bonding Pad," discloses a method to remove residue from a bonding pad using a dip in a solution comprising DMDO and MEA followed by an oxygen plasma treatment.

Sincerely,

A handwritten signature in black ink, appearing to read 'SBA', with a long horizontal flourish extending to the right.

Stephen B. Ackerman,
Reg. No. 37761

Form PTO-1449

Docket Number (Optional)

Application Number

TSMC-99-431/909

10/706,382

Applicant

Wen-Jui Fu et al.

Filing Date

11/12/03

Group Art Unit

INFORMATION DISCLOSURE CITATION
IN AN APPLICATION

(Use several sheets if necessary)

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	6162733	12/19/00	Obeng	438	706	1/15/99
	6063207	5/16/00	Yu et al.	134	2	2/1/99
	5824234	10/20/98	Jou et al.	216	18	10/2/96
	5380401	1/10/95	Jones et al.	156	665	1/14/93
	5970376	10/19/99	Chen	438	637	12/29/97
	5755891	5/26/98	Lo et al.	134	1.2	1/24/97
	5770098	6/23/98	Araki et al.	216	67	3/16/94
	5942446	8/24/99	Chen et al.	438	734	9/12/97
	5776832	7/7/98	Hsieh et al.	438	669	7/17/96
	6136680	10/24/00	Lai et al.	438	597	1/21/00
	5854134	12/29/98	Lan et al.	438	695	5/5/97

FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
					YES	NO

OTHER DOCUMENTS (Including Author, Title, Date, Part/Inventor Pages, Etc.)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

Application Number

10/706,382

Wen-Tui Fu et al.

11/12/03

Group Art Unit

U. S. PATENT DOCUMENTS

PLUNK DATE
X APPROPRIATE

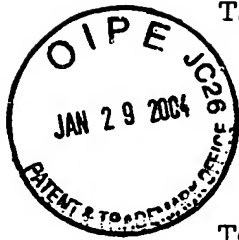
57312433/24/98	Peng et al.	438	612	9/5/95
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Translation

YES	NO
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

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ASSOCIATE POWER OF ATTORNEY

I hereby appoint Doug Schnabel, registration number
47,927, as my associate attorney in this case. His telephone
number is (517) 686-3462.

Please continue to direct all correspondence in this case
to the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "S. B. Ackerman".

Stephen B. Ackerman,

Principal attorney of record